**WHAT IS CLAIMED IS:**

1. A process for manufacturing a water-absorbent sheet material comprising a lightly cross-linked unneutralized acidic water-absorbent resin and a lightly crosslinked unneutralized basic water-absorbent resin comprising:

depositing particles of the acidic and the basic water-absorbent resins onto a support surface to form a continuous layer of water-absorbent resin particles; and

compressing the layer of resin particles to form the water-absorbent sheet material in a pre-determined thickness.

2. The process of claim 1 further including the step of contacting the resin particles with a bonding expedient selected from the group consisting of water, propylene glycol, glycerin, a $C_1$-$C_3$ alcohol, dimethyl formamide, dimethyl sulfoxide, heat, and a combination thereof, prior to or simultaneously with compressing the resin particles, to bond adjacent water-absorbent resin particles.

3. The process of claim 1 wherein the basic water-absorbing resin is neutralized 0% to 25% and the acidic water-absorbing resin is neutralized 0% to 25%.

4. The process of claim 3 further including depositing a second acidic water-absorbing resin neutralized 25% to 100%.

5. The process of claim 4 wherein the second acidic water-absorbing resin neutralized 25% to 100% is poly(acrylic acid).

6. The process of claim 1 wherein the basic water-absorbing resin is poly(vinylamine).

7. The process of claim 6 wherein the poly(vinylamine) is surface crosslinked with up to about 1% of a surface crosslinking agent, by weight of the poly(vinylamine).

8. The process of claim 7 wherein the surface crosslinking agent comprises ethylene glycol diglycidyl ether.

9. The process of claim 1 wherein the acidic resin is selected from the group consisting of polyacrylic acid, a hydrolyzed starch-acrylonitrile graft copolymer, a starch-acrylic acid graft copolymer, a saponified vinyl acetate-acrylic ester copolymer, a hydrolyzed acrylonitrile copolymer, a hydrolyzed acrylamide copolymer, an ethylene-maleic anhydride copolymer, an isobutylene-maleic anhydride copolymer, a poly(vinylsulfonic acid), a poly(vinylsulfuric acid), a poly(vinylphosphoric acid), a sulfonated polystyrene, a poly(vinylphosphonic acid), and mixtures thereof.

10. The process of claim 1 wherein the basic water-absorbing resin and the acidic resin are present in a weight ratio of about 5:95 to about 95:5.

11. The process of claim 1 wherein the basic water-absorbing resin and the acidic resin are present in a weight ratio of about 20:80 to about 80:20.

12. The process of claim 1 wherein the basic water-absorbing resin and the acidic resin are present in a weight ratio of about 20:80 to about 40:60.

13. The process of claim 6 wherein the poly(vinylamine) is a homopolymer.

14. The process of claim 6 wherein the poly(vinylamine) comprises vinylamine and at least one additional monoethylenically unsaturated monomer.

15. The process of claim 1 wherein the acidic water-absorbent resin and the basic water-absorbing resin are formed together into multicomponent superabsorbent particles, said particles manufactured to contain both resins.

16. The process of claim 15 further including particles of a single component water-absorbing resin selected from the group consisting of an acidic water-absorbing resin, a basic water-absorbing resin, and mixtures thereof.

17. The process of claim 15 wherein the multicomponent superabsorbent particles are present in an amount of about 10% to about 90% by weight, based on the weight of water-absorbing resins contained in the sheet material layer.

18. The process of claim 16 wherein the multicomponent superabsorbent particles are 0% to 25% neutralized, and the single component water-absorbing resin is 0% to 100% neutralized.

19. The process of claim 15 wherein each multicomponent superabsorbent particle comprises at least one microdomain of the acidic water-absorbing resin in contact with at least one microdomain of the poly(vinylamine) resin.

20. The process of claim 19 wherein the multicomponent superabsorbent particles are in the form of a bead, a granule, a flake, an interpenetrating polymer network, a fiber, an agglomerated particle, a laminate, a powder, a foam, or a sheet.

21. The process of claim 15 wherein each multicomponent superabsorbent particle comprises at least one microdomain of an acidic water-absorbing resin in close proximity to at least one microdomain of said poly(vinylamine) water-absorbing resin.

22. The process of claim 16 wherein the single component water-absorbing resin has a degree of neutralization from 0 to 70.

23. The process of claim 16 wherein the single-component water-absorbing resin comprises an acidic water-absorbing resin.

24. The process of claim 23 wherein the single component acidic water-absorbing resin is selected from the group consisting of polyacrylic acid, a hydrolyzed starch-acrylonitrile graft co-polymer, a starch-acrylic acid graft copolymer, a saponified vinyl acetate-acrylic ester copolymer, a hydrolyzed acrylonitrile polymer, a hydrolyzed acrylamide copolymer, an ethylene-maleic anhydride copolymer, an isobutylene-maleic anhydride copolymer, a poly(vinylphosphonic acid), a poly(vinylsulfonic acid), a poly(vinylphosphoric acid), a poly(vinylsulfuric acid), a sulfonated polystyrene, a poly(aspartic aid), a poly(lactic acid), and mixtures thereof.

25. The process of claim 16 wherein the single-component water-absorbing resin comprises a basic water-absorbing resin.

26. The process of claim 1 wherein the basic water-absorbing resin is selected from the group consisting of a poly(vinylamine), a poly(dialkylaminoalkyl(meth)acrylamide), a polymer prepared from the ester analog of an N-(dialkylamino(meth)-acrylamide), a polyethylenimine, a poly(vinylguanidine), a poly(allylguanidine), a poly(allylamine), a poly(dimethyldialkylammonium hydroxide), a guanidine-modified polystyrene, a quaternized polystyrene, a quaternized poly(meth)acrylamide or ester analog thereof, poly(vinyl-alcohol-co-vinylamine), and mixtures thereof.

27. The process of claim 25 wherein the basic water-absorbing resin is selected from the group consisting of a poly(vinylamine), a poly(dialkylaminoalkyl(meth)acrylamide), a polymer prepared from the ester analog of an N-(dialkylamino(meth)-acrylamide), a polyethylenimine, a poly(vinylguanidine), a poly(allylguanidine), a poly(allylamine), a poly(dimethyldialkylammonium hydroxide), a guanidine-modified polystyrene, a quaternized polystyrene, a quaternized poly(meth)acrylamide or ester analog thereof, poly(vinyl-alcohol-co-vinylamine), and mixtures thereof.

28. The process of claim 1 wherein the sheet material has an absorption under load of 0.7 psi of at least about 20 grams of 0.9% saline per gram of particles, after one hour, and at least about 30 grams of 0.9% saline per gram of particles after three hours.

29. The process of claim 1 wherein the sheet material has a saline flow conductivity value of greater than $15 \times 10^{-7}$ $cm^3sec/g$.

30. The process of claim 1 wherein the sheet material has an initial performance under pressure capacity rate of greater than 40 $g/g/hr^{½}$.

31. The process of claim 1 wherein the sheet material has a free swell rate greater than 0.30 g/g/sec.

32. An article made by the process of claim 1.

33. The article of claim 32 wherein the article is a diaper or a catamenial device.

34. A process of absorbing an aqueous medium comprising contacting the medium with the article of claim 32.

35. The process of claim 34 wherein the aqueous medium contains electrolytes.

36. The process of claim 35 wherein the electrolyte-containing aqueous medium is selected from the group consisting of urine, saline, menses, and blood.

37. A diaper having a core, said core cut from a roll of sheet material, said sheet material comprising at least 15% by weight of multicomponent water-absorbent particles wherein each multicomponent particle comprises at least one microdomain of a water-absorbing acidic resin in contact with or in close proximity to at least one microdomain of a water-absorbing basic resin.

38. A diaper having a core, said core comprising at least 15% by weight of multicomponent water-absorbent particles wherein each multicomponent water-absorbent particle comprises at least one microdomain of a water-absorbing acidic resin in contact with or in close proximity to at least one microdomain of a water-absorbing basic resin, said multicomponent water-absorbent particles held together by contacting a layer of said particles with a bonding expedient selected from the group consisting of water, propylene glycol, glycerin, a $C_1$-$C_3$ alcohol, dimethyl formamide, dimethyl sulfoxide, heat, and a combination thereof.

39. The diaper of claim 37 wherein the core has an acquisition rate for 100 milliliters of 0.9% saline under a load of 0.7 psi greater than two milliliters/second.

40. The diaper of claim 39 wherein the core has an acquisition rate for a subsequent 50 milliliters of 0.9% saline of greater than two milliliters/second.

41. The diaper of claim 40 wherein the core has an acquisition rate for a second subsequent 50 milliliters of 0.9% saline of greater than two milliliters/second.

42. The diaper of claim 38 wherein the core comprises at least 50% by weight multicomponent superabsorbent particles.

43. The diaper of claim 42 wherein the core has a shakeout of less than 10%, by weight, of the multicomponent superabsorbent particles.

44. The diaper of claim 38 wherein the core comprises at least 75% by weight multicomponent superabsorbent particles.

45. The diaper of claim 38 wherein the core comprises 100% by weight multicomponent superabsorbent particles or their component acidic and basic resins.

46. The diaper of claim 38 further comprising a topsheet in contact with a first surface of the core, and a backsheet in contact with a second surface of the core, said second core surface opposite from said first core surface.

47. The diaper of claim 46 further comprising an acquisition layer disposed between the topsheet and the core.

48.. The diaper of claim 46 wherein the diaper is free of an acquisition layer.

49. A diaper having a core, said core comprising at least 15% by weight of a superabsorbent material selected from the group consisting of (a) a blend of acidic water-absorbent resin particles neutralized 0% to 25%, and basic water-absorbent resin particles; (b) multicomponent water-absorbent resin particles comprising the acidic and basic resins of (a) disposed in the same particle but in different microdomains, and (c) mixtures thereof.

50. The diaper of claim 49 wherein the core has an acquisition rate for 100 milliliters of 0.9% saline under a load of 0.7 psi of greater than two milliliters/second, and has an acquisition for a first, second, and third subsequent 50 milliliters of 0.9% saline under a load of 0.7 psi of greater than two milliliters/second.

51. The diaper of claim 49 wherein the core comprises at least 50% by weight of one or more superabsorbent materials selected from (a), (b) and (c).

52. The diaper of claim 49 wherein the core has a shakeout of less than 10%, by weight, of the multicomponent superabsorbent particles.

53. The diaper of claim 49 wherein the core comprises at least 75% by weight of the superabsorbent material selected from (a), (b) and (c).

54. The diaper of claim 49 wherein the core comprises 100% by weight of the superabsorbent material selected from (a), (b) and (c).

55. The diaper of claim 49 further comprising a topsheet in contact with a first surface of the core, and a backsheet in contact with a second surface of the core, said second core surface opposite from said first core surface.

56. The diaper of claim 55 further comprising an acquisition layer disposed between the topsheet and the core.

57. The diaper of claim 55 wherein the diaper is free of an acquisition layer.

58. The process of claim 1 wherein the resin particles are formed into a sheet material by a wet process comprising mixing the resin particles with water to form a slurry comprising said resin particles in hydrated form; depositing the slurry of hydrated resin particles onto said support surface wherein the support surface is water-pervious; removing a majority of said water by draining said water through said support surface, while retaining said hydrated resin particles on said support surface; compressing the resin particles in the form of a sheet; and drying said sheet of resin particles.

59. The process of claim 58 wherein 2% to about 50% by weight fibers, based on the total weight of the dry sheet material, are added to the slurry and mixed with the hydrated resin particles prior to depositing the slurry onto said support surface.

60. The process of claim 59 wherein the fibers comprise cellulosic fibers, present in the sheet material in an amount of 2% to about 50% by weight, based on the dry weight of the sheet material.

61. The process of claim 60 wherein the cellulosic fibers are present in the sheet material in an amount of 5% to about 20% by weight, based on the dry weight of the sheet material.

62. The process of claim 59 wherein thermoplastic fibers are added to the slurry, in an amount of about 1% to about 10% by weight, based on the total weight of the dry sheet material.

63. The process of claim 61 wherein thermoplastic fibers are added to the slurry, in an amount of about 1% to about 10% by weight, based on the total weight of the dry sheet material.

64. The process of claim 62 wherein the thermoplastic fibers are selected from the group consisting of polyethylene, polypropylene, a co-polymer of ethylene and propylene, polyethylene terephthalate, and mixtures thereof.

65. The process of claim 58 wherein the hydrated resin particles are partially dried and compressed between a pair of pressure rollers, at least one of said pressure rollers being heated to a temperature of at least 40°C.

66. The process of claim 1 wherein the resin particles are deposited onto the support surface by airlaying to form a continuous resin layer.

67. The process of claim 66 wherein at least about 2% by weight water is added to the resin particles, based on the dry weight of the resin particles, to bind the particles together.

68. The process of claim 67 wherein water is added to the resin particles in an amount of about 2% by weight to about 30% by weight, based on the dry weight of the resin particles.

69. The process of claim 66 wherein the resin layer is heated to the glass transition temperature of the basic water absorbing resin particles to bind adjacent resin particles together.

70. The process of claim 69 wherein the resin layer is heated to a temperature in the range of about 55°C to about 150°C for a period of time sufficient to bind adjacent resin particles together.

71. The process of claim 66 further including the step of disposing a flexible support sheet over the support surface, and depositing the airlaid resin particles onto the flexible support sheet.

72. The process of claim 71 further including depositing a second flexible sheet of material on top of the continuous layer of resin particles, and thereafter heating the resin particles to adhere the top sheet of flexible material to the top surface of the layer of resin particles.

73. The process of claim 72 wherein the top sheet of flexible material is a water-impervious, continuous polymeric sheet.

74. The process of claim 73 wherein the top sheet of flexible material is coextensive with the top surface of the layer of resin particles.

75. The process of claim 1 wherein the resin particles are at least partially hydrated, with 2% to about 100% by weight water, based on the dry weight of the resin particles, prior to depositing the resin particles onto the support surface.

76. The process of claim 66, further including mixing fibers with said resin particles, in an amount of about 2% to about 50% by weight, based on the dry weight of the sheet material, and thereafter adhering the resin particles together with a bonding expedient selected from the group consisting of water, heat, and a combination of water and heat.

77. A diaper having a core cut from a roll of sheet material, said sheet material comprising at least 15% by weight of multicomponent water-absorbent particles wherein each multicomponent particle comprises at least one microdomain of a water-absorbing acidic resin in contact with or in close proximity to at least one microdomain of a water-absorbing basic resin, wherein said core has an improved integrity compared to a core containing a conventional SAP of 0.2 to 3.5 times in the cross direction and 0.2 to 3 times in the machine direction.

78. A diaper having a core cut from a roll of sheet material, said core comprising at least 15% by weight of a superabsorbent material selected from the group consisting of (a) a blend of acidic water-absorbent resin particles neutralized 0% to 25%, and basic water-absorbent resin particles; (b) multicomponent water-absorbent resin particles comprising the acidic and basic resins of (a) disposed in the same particle but in different microdomains, and (c) mixtures thereof, wherein said core has an improved integrity compared to a core containing a conventional SAP of 0.2 to 3.5 times in the cross direction and 0.2 to 3 times in the machine direction.